CLAIMS

1. An interface system for a personal computer comprising an array of data input keys having multi-character indicia, said interface system further comprising: data storage means; data processing means; and data display means, wherein the data processing means is adapted to facilitate a reduction in the number of key presses required to create a given data string to less than the number of characters within said data string by:

(i) filtering data stored within the data storage means by initial character, as determined by the character or characters ascribed to a data input key initially pressed by a user;

(ii) prioritising said filtered data in real-time according to user-configurable prioritisation parameters; and

(iii) displaying one or more prioritised data strings on the data display means for subsequent selection by the user.

2. An interface system according to claim 1, wherein successive key presses act to filter further the number of data strings displayed on the data display means for subsequent selection by the user.

3. An interface system according to claim 1 or 2, wherein the data input keys within the array have multi-character indicia which are selected to accord with a statistical extrapolation of the most used

alphanumerical character combinations in a given language, to thus facilitate a further reduction in the number of key presses required to create a given data string.

4. An interface system according to any preceding claim, wherein the data input keys having multi-character indicia are composite keys having at least primary and secondary indicia corresponding to primary and secondary key-values or key-functions.

5. An interface system according to any preceding claim, wherein the data storage means is defined by one or more data dictionaries in which qualitative and/or quantitative information is stored in relation to each data string.

6. An interface system according to claim 5, wherein a configuration means is provided to allow a user to selectively enable or disable physical interactivity reduction characteristics of the interface system which facilitate a further reduction in the number of key presses required to create a given data string.

7. An interface system according to claim 6, wherein the physical interactivity reduction characteristics are selectable from the group comprising:

(i) entering a space after selection of a data string;

(ii) limitation of displayed data strings to those having a total number of characters greater than the number of key presses required to display said data string on the data display means;

(iii) expanding typed or selected mnemonics, abbreviations or acronyms into their corresponding full data strings;

(iv) performing two-way translations between data strings and user-configurable dictionary definitions or descriptions.

(v) enabling the selection of a secondary key-value or key-function by means of double-pressing a data input key;

(vi) enabling the selection from a list of different data strings stored within the data storage means by means of double-pressing a data input key, said data string having an initial letter or letters corresponding to the key-value of that key; and

(vii) enabling the right-to-left and/or left-to-right deletion of n characters, words, sentences or paragraphs by means of a single key press.

8. An interface system according to claim 7, wherein the secondary key-value or key-function obtained by double pressing a data input key is identical with the SHIFT value of that key.

9. An interface system according to claim 7 or 8, wherein each double-press must be completed within a predetermined period of time in order to select the secondary key-value or key-function.

10. An interface system according to any of claims 7 to 9, wherein the secondary key-value corresponds to the secondary indicia of a composite key having multi-character indicia.

11. An interface system according to any of claims 7 to 9, wherein the secondary key-value corresponds to a capitalised conventional key-value.

12. An interface system according to any of claims 7 to 11, wherein there is provided at least one function key operable in combination with a composite key and adapted to access the secondary key-value or key-function.

13. An interface system according to claim 7, wherein the data strings selectable from the list are actively prioritised within the data storage means according to according to user-definable quantitative and/or qualitative information.

14. An interface system according to claim 7 or 13, wherein, the ability to select a different data string from the list is disabled upon pressing of the SPACE key, or another non-character key.

15. An interface system according to any of claims 6 to 14, wherein the configuration means also allows a user to selectively adjust the prioritisation parameters according to the desired qualitative and/or quantitative characteristics of the data stored within the, or each, data dictionary.

16. An interface system according to claim 15, wherein the qualitative and/or quantitative information comprises statistical and/or probability information relating to each data string stored within the data storage means.

17. An interface system according to claim 15 or 16, wherein all qualitative and quantitative information is dynamically updated in real-time.

18. An interface system according to any of claims 15 to 17, wherein the data processing means maintains lookup chains between two or more data dictionaries such that a given data string in a first data dictionary is mapped to a data string or strings in one or more other data dictionaries for selection by the user.

19. An interface system according to claim 18, wherein where a given data string in a first data dictionary is mapped to a plurality of data strings in one or more other data dictionaries, said data strings are prioritised via the configuration means for ease of selection by the user.

20. An interface system according to claim 18 or 19, wherein the mapping is performed dynamically.

21. An interface system according to claim 20, wherein the data processing means can selectively bypass or reset the dynamically updated qualitative and quantitative information.

22. An interface system according to any of claims 15 to 17, wherein the data processing means maintains associative links between any given data string and up to n other data strings to thus display or project the most relevant longer data string comprised of n+1 data strings for selection by the user.

23. An interface system according to claim 22, wherein a plurality of the most relevant longer data strings are made available or displayed in a prioritised list for selection by the user.

24. An interface system according to claim 22 or 23, wherein selection of a longer data string induces a repetition of associative linking such that a further one or more relevant longer data strings are displayed for selection by the user.

25. An interface system according to claim 23 or 24, wherein the relevance/prioritisation of the, or each, longer data string is determined according to statistical and/or probability information stored within the, or each, data dictionary.

26. An interface system according to claim 25, wherein statistical information relates to the historical inputting and/or selection of data strings.

27. An interface system according to claim 26, wherein the historical inputting and/or selection information can be one or more of the following: (i) frequency of inputting; (ii) frequency of selection (iii) character length; (iv) lexical pattern density; and (v) chronological weighting.

28. An interface system according to claim 25, wherein probability information can be one or more of the following: (i) occurrence and/or association ratios of two or more data strings within a longer data string; (ii) context ratios determining the likelihood of a given data string being grouped with one or more other data strings to determine the context of a longer data string.

29. An interface system according to any of claims 23 to 28, wherein the one or more data strings displayed on the data display means for subsequent selection by the user are displayed in list format in descending order of priority.

30. An interface system according to any of claims 5 to 29, wherein synchronisation of data dictionaries between two or more personal computers

can be accomplished by means of wired or wireless connectivity.

31. An interface system according to any of claims 5 to 30, wherein synchronisation of data dictionaries between two or more personal computers can be accomplished by means of downloading from a common database.

32. An interface system according to any of claims 5 to 31, wherein the, or each, data dictionary is manually populated.

33. An interface system according to any of claims 5 to 31, wherein the population of the, or each, data dictionary with data and its corresponding qualitative and/or quantitative information may be accelerated by uploading onto the data storage means data strings resident on a personal computer or a remotely connected device.

34. An interface system according to any of claims 5 to 31, wherein the dictionaries are populated by optically scanning external data strings by means of scanning apparatus.

35. Data input apparatus for a personal computer comprising an array of data input keys having multi-character indicia, said apparatus adapted to facilitate a reduction in the number of key presses required to create or delete a given data string to

less than the number of characters within said data string.

36. Data input apparatus according to claim 35, wherein the multi-character indicia comprise a combination of alphabetic characters.

37. Data input apparatus according to claim 35 or 36, wherein the multi-character indicia include digraphs.

38. Data input apparatus according to any of claims 35 to 37, wherein the multi-character indicia include tri-graphs.

39. Data input apparatus according to any of claims 35 to 37, wherein the multi-character indicia include tetra-graphs.

40. Data input apparatus according to any of claims 35 to 39, wherein the keys within the array are arranged such that the most frequently used multi-character combinations in a given language are positioned closest to the home keys.

41. Data input apparatus according to any of claims 35 to 40, wherein the keys having multi-character indicia are composite keys having at least primary and secondary indicia.

42. Data input apparatus according to any of claims 35 to 41, wherein the keys having multi-character

indicia are provided substantially centrally on a QWERTY keyboard between home keys F and J, respectively.

43. Data input apparatus according to any of claims 35 to 41, wherein the keys having multi-character indicia are provided on a DVORAK or MALTRON® keyboard.

44. Data input apparatus according to any of claims 35 to 43, wherein the array of keys are represented on a graphical touch screen.

45. Data input apparatus according to claim 44, wherein the multi-character indicia on the graphical touch screen are dynamically updated in real time such that the multi-character combinations keyed most frequently by a user are positioned closest to the home keys.

46. Data input apparatus for a personal computer having calculator functionality, said apparatus comprising an array of conventional numerical and calculator operator keys, a plurality of calculator control-keys and display means located on the input apparatus, wherein said control-keys are operable in combination with said calculator operator keys and/or said numerical keys to: (i) selectively send calculator-related key values to a computer; and (ii) selectively perform mathematical calculations and display the results of said calculations on the

display means and/or send said results to a computer.

47. Data input apparatus according to claim 46, wherein the calculator operator key values are selectable from the group comprising ., +, -, /, *, %, √, +/-, C/AC, MKUP, SEND and ENTER.

48. Data input apparatus according to claim 46 or 47, wherein the calculator control-keys can toggle between activated and deactivated states.

49. Data input apparatus according to any of claims 46 to 48, wherein the calculator control-keys comprise: (i) a first control key for selectively displaying the results of calculations performed using the array of numerical and calculator operator keys on the display means; and (ii) a second control key for selectively sending the results of calculations performed using the array of numerical and calculator operator keys to a computer.

50. Data input apparatus according to claim 47, wherein the second control key is the SEND key which, when pressed, acts to send the value displayed on the display means to the computer.

51. Data input apparatus according to claim 47, wherein by pressing the ENTER key, the calculator performs the most recent calculation and updates the display means accordingly without sending same to the computer.

52. Data input apparatus according to claim 49, wherein when both the first and second control keys are in deactivated states the conventional numerical and/or calculator operator key values themselves are sent to a computer without performing mathematical calculations.

53. Data input apparatus according to any of claims 46 to 49, wherein the apparatus is provided with a retention buffer, which holds a calculation history of n most recent numeric entries, operators and equated values.

54. Data input apparatus according to claim 53, wherein the retention buffer allows a user to regress, recur and/or rectify calculations from any previous point within the buffer history.

55. Data input apparatus for a personal computer comprising an array of data input keys, said apparatus adapted to facilitate a reduction in the number of key presses required to create a given data string to less than the number of characters within said data string; and wherein the apparatus comprises one or more function-lock keys that are selectable by a user to lock the functionality of the data input keys in one of two modes to maintain said selected mode until a subsequent de-selection of said function-lock key by the user.

56. Data input apparatus according to claim 55, wherein the function-lock keys are chosen from the group comprising: ALT Lock, CTRL Lock, SEQ Lock and DUAL Lock.

57. Data input apparatus according to claim 56, wherein the SEQ Lock key allows the selection of secondary key-values by means of sequential as opposed to simultaneous key presses.

58. An interface system for a personal computer comprising data input apparatus according to any of claims 35 to 45.